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ABSTRACT

A complete learning model will merge the Piagetian and Banduran learning models into a unified, comprehensive model to explain individual diversity. This argument is based upon analysis of the first five years of data gathered from a 13-year longitudinal study. The data from grades 5-12 are still in the analysis process, but impressionistic observation made from those data are included in the author's argument. The study concerning political socialization theory was designed to fill in these gaps: (1) little is known about civic awareness growth among pupils below the fourth and fifth grade; (2) few longitudinal studies have been done to accurately track a "pattern" of growing political awareness; and (3) there is a need to test the hypothesis that different periods in history may produce different patterns of political organization. Also, both models of learning theory, Piagetian and Banduran, were tested. The data give evidence that those political phenomena involving a high level of abstraction are most easily grasped when the cognitive-developmental hurdle is surmounted at the same time that the child's immediate environment also contains relevant stimuli. The study appears to offer a better understanding of the ways that cognitive maturation and environmental stimuli may work together to produce significant advances in political understanding. Both models are useful for explaining growth in political understanding. (SM)

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PIAGET AND BANDURA:

THE NEED FOR A UNIFIED THEORY OF LEARNING

by

Stanley W. Moore

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Piaget and Bandura:
The Need for a Unified Theory of Learning

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The discipline of Political Socialization, or to be more complete, the interdisciplinary study of the political socialization process, is less than three decades old.[1] To paraphase Lasswell, researchers are attempting to determine who learns and feels what, when, where and how through the utilization of empirical research designs. This paper reports on the first five years of a thirteen year longitudinal study of a panel of subjects, begun when the children were in kindergarten in 1974 as five-and six-year-olds. In 1986 the panel was interviewed for the tenth time in thirteen years as seniors in high school. The 1986 interview questionnaires consisted of more than 140 fixed response items (although many queries on this questionnaire were really open-ended, the subjects wrote their responses rather than responded verbally), and more than 160 questions given by the interviewer in a one-on-one oral interview. The data from the first five years, K-4, have been analyzed extensively and reported in some detail in the book The Child's Political World: A Longitudinal Perspective (Praeger, 1985).[2] Data from fifth grade, 1979, through high school are still in the process of being coded and put into the computer file for thorough analysis; nevertheless, some impressionistic observations will be made concerning the data of grades 5-12, as we attempt to explore two somewhat divergent theoretical learning models and their applicability to, and explanatory power of, "kids and politics."

Which political phenomena become salient very early for most primary school children? Which political symbols are recognized before others? When do children begin to distinguish between the public and private sectors? between different geo-political jurisdictions? When and how do children become familiar with the major issues of the day? What is the pattern young children follow as they increase in political knowledge? Does the expansion follow a linear progression, or is growing awareness characterized by spurts at regular, or irregular, intervals? And, what theory of learning seems to best explain the patterns of developing knowledgeability? Does Piaget's cognitive developmental model, with its greater stress on internal growth preceding the interactive ability, better explain the data, or does a social learning model such as Bandura's have greater explanatory value? Are some kinds of political knowledge and patterns of growth more easily explained by one model or the other?

This longitudinal study was designed to fill in several lacunas concerning the political socialization of children. First, because most previous studies utilized fourth and fifth graders as their youngest subjects, very little was known about the growth of civic awareness among younger pupils. Second, few of the completed studies were and are longitudinal--consequently the researcher

is forced to make the unwarrented assumption that there is a panel of subjects rather than a series of separate sets of data, one for each grade level, and he or she is therefore tempted to assume that a "pattern" of increasing political awareness represents purely maturational changes rather than being the product of differing life experiences among distinct cohort groups. Third, there is always the need for more recent studies to test the hypothesis that different periods in history may produce different patterns of political socialization; if this turns out to be the case, and certainly the data I have gathered concerning knowledge of political parties, etc., are severely depressed when compared with the studies of the early 1960s, then this may be evidence for one learning model rather than another. Finally, when this study began in 1973-1974 there was a dearth of sytematic exploration of alternative learning theories, and, as Cook has pointed out, there had been a serious "cost of misunderstood psychological theories."[3] No single model has been advanced by analysts of political behavior as capable of explaining all political learning, but it is clear that the more complex models, such as Piaget's and even Bandura's, need to be investigated with greater precision than has heretofore been attempted. And, both of these models are being tested by this present study, and will continue to be tested as the panel is followed into the 1990s and beyond.[4]

When this study was begun I first thought that these two models, the cognitive-developmental and the social learning, were contraries--the polar ends of a continuum. But over time I discovered that a complex social learning model such as that advanced by Albert Bandura acknowledges the important influence personal factors like endowed potentialities, acquired competencies, and other expressions of individual initiative have on human learning. Bandura does stress the reciprocal relationship between these "internal" forces and the social environment. He does not view the learning process as an either/or, of either personal maturation or environmental causation, but emphasizes both/and, that both are involved. On the other hand, while the cognitive-developmental assumes that a child's mental capabilities develop through a series of clearly identifiable sequential stages, and that a child must attain a particular maturational level in order to comprehend more complex and abstract phenomena, it is important to recognize that Piaget's model does <u>not</u> rely exclusively on the influence of cognitive maturation in explaining why learning occurs.

> Piaget, in fact, acknowledges the role of four distinguishable factors in explaining how children learn: (1) heredity (internal maturation), (2) physical experience with the world of objects, (3) social transmission (education), and (4) equilibrium--representing a balancing of the first three.[5]

Consequently, it is important to recognize that Piaget and Bandura are not polar opposites, and that in fact they appear to have broadened their models of learning over time to accommodate or assimulate perspectives more typically thought to be integral to the "other" model. My book, and this paper, will argue that a truly complete learning model will merge these two models into a unified, comprehensive one in order to explain the diversity of individuals, how active or passive these "learning" individuals are, and how permanent the cognitive and affective outcomes are.

In order to measure the development of civic awareness in our panel of 243 Southern California school children two approaches were adopted; a twenty-item cognitive map was used to illustrate and crudely measure the panel's political knowledge (see Appendix A), and first four and then by fourth grade nine abstract political concepts were combined to form a Political Understanding Index, while another series of questions formed a Legal Understanding Index. Each child's response was "staged" on each query and a composite score for each child was used to measure developing knowledgeability (see Appendix B for a sample of the six stages of

political knowledgeability for several of what my original colleagues and I call "threshold" or "organizing" concepts). In Appendix C I have included several figures as well as a graph that present the growth in knowledgeability over the first five years of this study.

Utilizing Connell's work in Australia which concludes that initial political awareness there among children centers around symbol recognition, seven symbols of the American polity were presented to the panel.[6] Table 1 shows the changes in recognition of pictures of a number of political symbols. Washington and Lincoln, our two most famous presidents, had high levels of recognition in kinder-

TABLE 1
Changes in Recognition of Pictures of Political Symbols (in percentages)

Unifying Symbols	K	1	2	3	4
American Flag[a]	99	a	a	a	a
George Washington	52	68	82	93	98
Abraham Lincoln	44	66	82	93	99
Statue of Liberty	16	39	80	91	93
Liberty Bell	1	14	66	91	93
Conflictual Symbols					
White House	NA	NA	52	61	71
National Capitol	5	6	12	14	25[b]

[a]After 99 percent could identify "our country's flag" from among four national flags in kindergarten, this question was dropped from the interview schedule.
[b]Forty-five percent of the fourth-grade children mistakenly thought that the Capitol was the White House, and another 4 percent said that the building pictured was in Washington, D.C.

garten, higher than expected, so I interviewed two kindergarten classes in the fall simply to test whether there was a "February effect." Much to my surprise, in the second week of their first year in school, 47 percent of the children already recognized Washington, and slightly over 20 percent recognized Lincoln. When asked where they learned who these individuals were, a number made references to their likenesses being on our money or that their parents had taught them. In the panel, knowledge of these two presidents concerns trivial personality-related matters--Washington had wooden teeth and Lincoln was tall and thin and that he was shot. Through fourth grade, these presidents were not known for their political and military significance--it was still wooden teeth and violent death that the panel mentioned. For many kindergartners these two famous presidents were still alive, picked later presidents, made laws, etc. In 1976 two symbols, the Statue of Liberty and the Liberty Bell, showed leaps of recognition--both gained over 40 percent, and the Liberty Bell leaped 52 percent. With these four symbols, then, there appears to be evidence to support social learning; the Bicentennial celebrations appear to have made the Statue and the Bell salient, and we can assume that their pictures were repeatedly presented to our panel as second graders. The flag, the first symbol that is learned, is ubiquitous in our society, and the fact that all but one child could identify it (out of four flags) at such an early age compared to Jahoda's finding among older children in Glasgow of only a 42 percent recognition of the Union Jack, again provides evidence for the social learning model. Having spent five months in Great Britain, I was struck by how

less visible the Union Jack is there, compared to the flag in our country; it also appears to play less of a role in the marketing of consumer goods. Our flag is everywhere, and the young child in the United States very quickly is able to identify it as "our flag."

Constant reinforcement, however, does not always communicate recognition or knowledge to the growing child. Five years of ritualistic flag salutes did not communicate the name of our country to almost one-third of our panel (31 percent of our fourth graders were unable to give our country's name when asked). And, it took five years before more than nine out of ten children knew the name of the city within which they resided--something that most parents probably attempt to teach them when they send them off to kindergarten for their safety. The figure below indicates that there was a significant jump in the recognition level of Governor Brown in 1978 (fourth grade), the year he was running for reelection--successfully. While this is certainly support for the

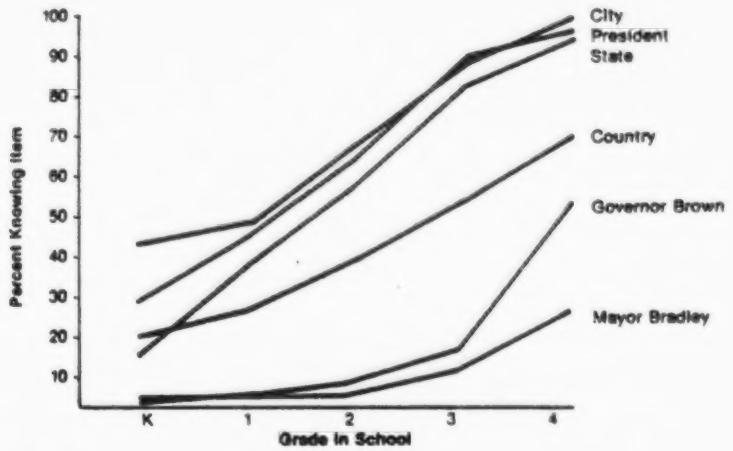

FIGURE 1
Growth in Knowledge of Geo-political Jurisdictions and Corresponding Chief Executives, K-4.

social learning hypothesis, the overall pattern is not. Knowledge of geo-political jurisdictions appears to be too abstract and remote for most young students. Only four percent of the children could identify correctly all three geo-political jurisdictions in kindergarten; of this group, only one boy was correct in all four succeeding years. The same is the case for those who knew all three levels in first grade; the responses in succeeding years follow an almost random pattern. The geo-political area has both spatial and conceptual dimensions. Apparently, the abstractness of the political dimension blurs spatial concreteness. The aggregate pattern of steady increasing knowledge, so that in fourth grade two-thirds of the children can correctly identify all three, and those that can identify none drops steadily from 46 percent in first grade to only two percent in fourth grade, appears to fit the cognitive-developmental model. The following table presents a pattern of rapid and increasing knowledgeability, and it suggests, I believe, that the learning process involves at least in part the maturation of learning skills involving spatial and conceptual distinctions, rather than simple interaction with environmental stimuli.

The fact that many of the children are inconsistent over the five years, that they can regress or at least be incorrect at a later time (for they may have just guessed the first time they were correct), at least indicates that pupil knowledgeability patterns are subject to considerable variation, perhaps due to guessing and possibly to differences because of differences in environmental stimuli from year to year. The geo-political data suggest that a useful theory of political learning--even in a limited area such as this--must embrace both the cognitive-developmental and the social learning models.

TABLE 2
Growth Pattern of Geo-political Knowledge* (in percentages)

	Grade				
Items Correct	K	1	2	3	4
All 3 Correct	4	11	26	48	67
City + State	9	14	23	30	23
City + Country	8	6	5	2	1
State + Country	1	1	2	2	1
City Only	20	16	13	6	6
State Only	3	12	7	4	—
Country Only	7	9	5	2	.04
Incorrect Responses	46	29	16	3	2
NA	1	2	3	2	—
	99	100	100	99	100.4
N =	(149)	(243)	(243)	(243)	(243)

*Based on responses to: What city do you live in? What state do you live in? What country do you live in?

Knowledge about current public policy issues is apparently best explained by the social learning model. Over the years this area expanded tremendously, especially after fifth grade. In the senior interviews there are probably two dozen policy issues that are probed by the two interview schedules. But during the first years only three public issues were presented the students: Watergate, Vietnam and the energy crisis. It is apparent from the table below that knowledge about Watergate diminishes and then plateaus--

TABLE 3
Changes in Awareness of Public Issues (percentage able to say something substantive about the issues)

	Kinder-garten	*First Grade*	*Second Grade*	*Third Grade*	*Fourth Grade*
Watergate	14	4	7	6	7
Energy Crisis	36	30	26	55	68
Vietnam	6	24	28	35	55
Unemployment				17	33
Inflation				6	15

in all probability because it was referred to less and less by both parents and the media following President Nixon's departure. Many citizens, and parents, desire to forget this national trauma. Ironically, Nixon's desire for a place in history led in part to his taping of conversations, but in 1978 our fourth graders are more likely to recognize President Kennedy's picture than his; the members of this panel were born in 1967-68, and it is likely that their parents had been positively affected by Kennedy and are passing on that to their offspring--home reinforcement compensating for dated textbooks that in two districts did not cover Kennedy's presidency in 1978.

The pattern of awareness of the energy crisis is most revealing. In 1974 the 36 percent of the children could explain to us what the energy crisis was--waiting in gas lines to fill up the family car and the need to save energy through a variety of means, such as turning off the lights. Another third of the panel said that they had heard about the crisis but were unable to concretely explain what is was. Notice that the number capable of explaining it drop in each of the next two years, only to suddenly double to 55 percent in third grade. Why? In 1977 President Carter declared the battle against the overconsumption of oil was "the moral equivalent of war," and during the spring months initiated his drive for legislation for synfuels, etc. And, it is in April, May and June that the interviews were conducted. One year later student awareness had again grown, and at least seven children stated that their futures were going to be affected by the increasing scarcity of energy! The pattern appears to be one where an issue that was salient, and was being daily reinforced by highly visible gas lines, was capable of being understood by five and six year old children. But once the lines disappeared and it was no longer being reinforced by their environment, the issue was forgotten by one-third of the youngsters who originally were capable of describing it. But, once it became a salient issue again, and once the president, the most visible political actor if not the only figure to these children, began to discuss it and push for legislation, then there is a one year leap of 29 percent, followed by a 13 percent gain the following year.

Vietnam? Why would knowledge or recognition of it grow yearly after 1974? The war was over. Our soldiers had all come home. True...but with them came many Vietnamese refugees. I believe that the progressive increases can be attributed almost totally to the refugee children who became classmates of this panel of California students; in the three original schools (out of six) that I interviewed annually, all had Vietnam refugees, and many of the children were aware that their churches were bringing in refugees--and described the process. One boy's response to the query was "A country, and we adopted, our church, 50 people. We gave them a home because there were all those wars over there."

In sum, based on the responses to these three public issues, it would appear that an awareness of these issues depends heavily on environmental stimuli. With issue areas such as inflation and unemployment, this two-year pattern may represent an increasing cognitive capacity to understand abstract political and economic phenomena. In subsequent years my impression is that issues like the Iran hostages, a rather traumatic event, remains with the average pupil for a long time, but less salient events are not even known. As seniors, most of the panel knew nothing about El Salvador or Nicaragua. And, most could not identify whether we supported the Sandinistas or the Contras! Public policy issues that are clear, unambiguous, will be grasped by the student; but, issues that are remote, not a personal concern nor a direct concern of the United States, will not be learned or, at least, will not be remembered a year later. When asked in high school to tell me, "What wars are going on now?", most can only think of Lebanon and Israel, and the United States direct involvement there and the loss of Marine lives. A few are aware of the Iran-Iraq conflict, and Afganistan, but

the majority are not. On the other hand, there is about one-eighth of the panel which isvery knowledgeable about current issues; my impression is that they would be equal to most knowledgeable and interested adults. So, where the individual is really interested and interactive with the political environment, then by high school they are likely to be as aware as most aware adults. And, these panel members are almost always knowledgeable across the spectrum--and are doing well academically as well. Thus a better student is likely to be more politically aware, more capable of interacting with the political environment, and more likely to be able to a piece of information into a meaningful political understanding of the world.

The last major area that provides support for the social learning model is the electoral-political party process domain. Appendix A indicates that the ability to explain what an election is grew from seven percent in kindergarten to 94 percent in fourth grade. However, the real leap in knowledgeability came in 1977 after the presidential campaign of November, 1976. During the Spring, 1976, only 26 percent could explain what an election is. But one year later, after a jump of 49 percent, 75 percent can. And, apparently the govenatorial race of 1978, when recognition of Governor Brown shot up 36 percent, the ability to describe what an election is rose another 19 percent to 94 percent. Of note is the fact that two of our four major areas from which our panel was obtained held mock elections in 1976, during the fall, and students continued to mention these in tenth grade.

TABLE 4
Knowledge of Politician and Political Parties (by percentages)

Question	*Grade*				
	K	1	2	3	4
Can define "politician"	0	1	4	5	10
Claim to have "heard" Republican	22	37	62	75	86
Claim to have "heard" Democrat	22	26	46	72	79
Claim to have heard both	9	15	38	62	75
Claim to have heard neither	65	50	30	13	10
Can define Republican		0	0	0.4	2
Can define Democrat		0	0	1	3
Can define both		0	0	0.4	1
Can give a policy difference between Republican and Democrat				3	3
"Democrats are opposite of Republicans," or vice versa				3	7
Can explain what a political party is				2	7
Have heard the term "political party"				26	41
Correctly identify the "President's party"				12	16
Can give a reason for preferring a party				4	6
Have made a party identification				6	7
Democrat				3	3
Republican				3	4
N =	(149)	(238)	(236)	(240)	(243)

The above Table 4 shows the growth, or really, the lack of growth in awareness of the political party process and the role it plays in our democratic polity. There is no reason to believe, a priori, that children in 1978 are systematically less cognitively mature, and consequently less able to understand the American party process. It would appear more appropriate to assume that any systematic difference in knowledgeability between subjects in the early 1960s and subjects in the second half of the 1970s (see our discussion above on page two) is the result of environmental factors, not inherent differences in the ability to comprehend political party phenomena. Sadly, our fourth graders in 1978 do not compare favorably with the Easton and Dennis or the Greenstein subjects. In 1962, two years after Kennedy became president, 76 percent were correctly able to identify him as a Democrat; in 1978, two years after Carter became president, only 16 percent of our panel was able to identify him as a Democrat. And while eight out of ten in our panel claim to have"heard" the terms "Republican" and "Democrat," three percent or less are able to define what those terms mean. In the early 1960s between 56 and 65 percent of the fourth graders had made some identification with a political party; only seven percent of our panel have made such an identification--and the evidence is that even for these few that identification is very unstable. It seems to me that the data of Table 4 point to a lack of learning because of changes in the political environment of the California panel. Carter is known to be president by 94 percent of our fourth graders, but he was not as charismatic a figure as Kennedy. However, the real difference, in my opinion, can be attributed to the nonpartisan nature of local government in California--all city and county candidates run without party identification--and to a general contemporary weakness nationwide of our political party system, as typified by the high percentage of "independents" (our second largest "party") and the prevalence of ballot splitting, etc. In addition, from personal observation I believe that many adults were embarrassed to talk about our polity during much of the 1974-78 period; the controversy over our involvement in Vietnam, followed by the first resignation of a sitting vice president, followed by the resignation for the first time in our history of a president, and the months of political embarrassment as Watergate unfolded, all led many parents to cease to discuss politics around their homes, and, consequently, around their children. Partisan politics, we believe, are often avoided by parents and schools. Fitzgerald's analysis of the U.S. history books used in the elementary schools supports this view; political conflict is often deemphasized or even avoid--and, as Table 1 indicates, unifying symbols become known much earlier than conflictual ones.[7] And, in the 1970s, given all the political trauma, this tendency was probably heightened. Party salience was low, and school and parent reinforcement was greatly reduced. The social learning hypothesis seems to be the most appropriate explanation for the data.

The social learning model, then, seems to best explain the political party domain, the recognition of certain politicians, the recognition of political symbols, and knowledge concerning public policy issues of the day. What evidence is there for the cognitive-developmental model? Appendix A and our discussion of the geo-political present data indicate linear growth in a number of areas that might be evidence of internal maturational growth. The geo-political area seems to be too abstract to be traced to merely environmental stimuli as an explanation for the growth pattern. But it is more difficult to find evidence pointing to internal maturation as the explanation for the patterns of political knowledgeability.

We began by positing that certain abstract concepts might provide children with keys to understanding additional political phenomena--what we term "thres-

hold cognitive variables."* Stimulated by the work of Piaget and Kohlberg that children might progress through a series of stages of cognitive as well as moral development as they mature, we developed six stages of political understanding (two stages in each of three levels) as well as six stages of legal understanding. (See Appendices B and D.) For Piaget and Kohlberg, these stages imply qualitative differences in a child's mode of thinking or problem solving at different ages and are supposedly sequential. For Kohlberg, once a stage of moral development is attained the child will not regress to a lower, earlier stage.[8]

In order to begin testing the applicability and explanatory power of the Piagetian model to the area of politics and government, we asked a number of research questions: Do stages of political knowledgeability exist? Are they empirically identifiable? Are they sequential? Do they occur in a fixed and apparently predetermined order? What are the key concepts that might help a child achieve greater understanding of the political world, if those concepts were understood? Are there certain key concepts that must be grasped before a child can move to more advanced levels of political awareness?

Borrowing the six-stage, three-level framework posited by Kohlberg, we postulated a lowest prepolitical level (Level 1) with two stages--an initial symbol recognition stage (from Connell's work) and a Stage 2 when a child has an accurate byt very general definition of a public process or function.

> Responses to the query "What does the President do when he goes to work?" ...of 'signs papers, 'makes speeches,' and 'has meetings' are Stage 1 responses. 'Makes laws,' 'runs the country,' and 'solves problems' illustrate Stage 2 responses...There is an amorphous task pool of public functions with which the President is associated. This inability to recognize a division of labor among the key political actors suggests that this initial level comprising Stages 1 and 2 is 'prepolitical.'[9]

The quasi-political level (Level II) also has two stages, Stage 3 involves the recognition of at least one critical function associated with a political object or actor, while Stage 4 was defined as requiring the student to recognize at least two critical, central functions. (See Appendix B.) Finally, we hypothesized a third level (Level III), the truly political level, again with two stages. Stage 5 would represent a senior high school or college introductory textbook understanding of politics, while Stage 6 would be achieved when a subject has a sense of the varying interpretations for political objects and processes, and that there is no one completely accurate view of these--that differences in cognition are partly due to differing ideological assumptions concerning the American polity.

We believe that our three levels of political cognition:

> represent differing modes or structures of thought about politics. The first level, which we characterize as prepolitical and corresponding to the Piagetian preoperational level, represents an undifferentiated view of society, authority, and goverance. Political symbols are recognized as important, but they are not clearly differentiated from religious symbols or from other nongovernmental objects. In short, there is neither

*We originally selected four key concepts as possible threshold variables: "What does the President do when he goes to work?", "What does the government do?", "What is an election? and"Who picks the President?", and "What are taxes?". Later we posited that "What is Congress?", "What is the Supreme Court?", "What is a Senator?", "What is a political party?", and "What do politicians do?" should be key concepts that if understood would lead a child to greater political knowledge.

> differentiation between the political and the nonpolitical nor any sense of integration or formally abstracting categories within the realm of the political. At the second, quasi-political level, which roughly corresponds with the Piagetian concrete operational level, we find children beginning to identify the critical features or functions of political objects--but they are not yet ready to articulate the interconnections between and among political authorities and institutions; they do not see politics as a fully integrated system. Furthermore, they are not yet ready to appreciate that perceptions of politics are affected by the underlying value assumptions of the observer. These latter features--understanding interconnections and integrative systems and appreciating cultural and ideological bias--are characteristics of the political or formal operational level of cognitive development. It is at this level that the individual begins to understand causal connections between economic conditions and political outcomes or between ideological orientations and political behavior. The three levels then represent clearly distinguishable <u>modes of thought</u> concerning political phenomena. [12]

Obviously, to fully test the Piagetian cognitive-developmental model the subjects will have to be followed at least until they are capable, supposedly, of doing formal operations. The panel has been followed for thirteen years, but serious systematic analysis of the data has been done only for the first five years, K-4. The ultimate test for this model is yet to come, as the 5-12 data is analyzed and as the panel is again reinterviewed in 1990, 1994, 1998 and beyond. Nevertheless, the data presently available, as well as scholarly impressions of the fifth through twelth grade responses, allow at least a partial testing of the cognitive-developmental model.

In comparison to traditional independent variables of sex, sibling order, ethnic background, parents' occupations, and media use, the stage that a child was at on the threshold cognitive variables, and the stage he or she was at on the four and nine combined Political Understanding Indices, was far more predictive of understanding of the twenty items on the cognitive map. (See Appendix A for the twenty item map.) If a child has some understanding of the government does, then he or she will know many more political objects than the child who does not have such an understanding--and the higher the child's stage, the greater the political knowledgeability. The only traditional variable that is even as half as predictive of political knowledge is "estimated academic rank," a ranking that the teachers were asked to make in third and fourth grades. There are a number of subjects who were, for example, given a middle-third ranking by their teachers, but who knew what government does, or the president, or understood taxes, and who then systematically knew more about other political phenomena. This may merely be associational and not causal, and it could perhaps be assumed within a social learning model--if you know this abstract concept about politics then it makes you more capable of understanding something else that is being emphasized in the surrounding political environment. But, our impression is that very few things were being reinforced by the environment--that the political environment was almost neutral or nonexistent for most of our panel. And yet, those children who had grasped one or more (and, most often if they knew one threshold variable they knew one or more of the others as well), systematically were accurate on a whole range of political phenomena that were not in any way salient in their day-to-day world. (See the difference between Appendix E and Appendix F.)

In order to achieve a meaningful understanding in any area of human knowledge, the individual must first grasp a certain number of organizing concepts

that provide a framework within which to place additional information. I believe that the political concepts that we hypothesized would be, and appear to have been, threshold variables, constitute such an organizing framework for the young child's understanding of politics. Some of these concepts seem to be age-related, that is, they may have explanatory power during one period of time and then, as more and more youngsters understand that concept, other concepts are needed to assist the developing child attain higher and higher levels of political knowledgeability. We found what appears to be an evolving cognitive framework, and this would appear to support the applicability of the Piagetian model to the realm of politics. By examining the individually staged threshold variables, we can determine that different political cognitions are of greater utility in predicting a child's level of political knowledge at different times during his or her development. Again, this is associational; but, it may also be causal. The latter seems to be supported by an interesting finding. None of the threshold variables used at the end of third grade is as dependable as we would like. This appears to be the case primarily because the variability of the responses to the twenty cognitive map items is depressed--as more and more of the children recognize them (see Appendix A)--without an accompany increase in the distribution of children between Level I and Level II on the Political Understanding Index (the combined Index of all of the threshold variables). The note at the bottom of Table 5.6, in Appendix F is germane to this. At the end of fourth grade three key variables reestablished their predictive capacity as more and more members of the panel (37 percent) attained Level II on those particular queries. There was not a corresponding resurgence in the predictive power of the presidential duties question, apparently because only 11 percent of the panel moved to Level II on this threshold cognitive variable. This phenomena seems, in my opinion, best explained by the cognitive-developmental model rather than the social learning one.

All of our nine threshold organizing concepts are regime related are abstract concepts that might provide, and I believe do provide, a structure for the child to organize other political information--as a Christmas tree provides the structure for the ornaments, tinsel and lights. These concepts, if understood, help the child to more actively interact with the stream of information flowing around he or she. In one area of the political domain, the ability to distinguish between public and private occupational roles, our panel actually became less accurate. The following table makes it clear that primary school children--however knowledgeable they may be concerning other civic matters--do not yet

TABLE 5
Responses to "Which Ones Work for the Government? Does a (role) Work for the Government?" (by percentage of those giving a "yes" response)

Public Roles	*Grade Level*				*Easton and Dennis*			
	K	1	2	3	4	2	3	4
Judge	76	84	89	90	97	86	88	89
Policeman	67	82	91	93	96	86	89	91
Soldier	49	56	68	89	87	68	79	83
Teacher[d]	46	58	52	67	71	48	55	58
Mailman	45	56	60	73	90	57	63	71
Average	57	67	72	81	88	69	75	78

Private Roles[b]								
Milkman	35	45	40	52	59	29	31	28
Gas Station Man		46	54	64	78	e	e	e
Candy Store Person				25	31	e	e	e
T.V. News Person				72	78	e	e	e

[a]Percentages represent *correct* responses.

[b]Percentages represent *incorrect* responses.

[c]These percentages are reported by David Easton and Jack Dennis, *Children in the Political System* (New York: McGraw Hill, 1969), p. 122.

[d]For purposes of this table responses of 18 parochial school pupils were categorized as correct if they believed their teachers did *not* work for the government.

[e]These pupils were not asked to identify these roles.

grasp the distinction between the governmental and nongovernmental sectors. All nine of these occupational roles, except for perhaps the milkman--although in two of our four areas home delivery was available during the entire time of the study, are visible and known to the students, reinforced in some cases daily by contact, and yet one could argue that because the panel increasing thought all nine occupations were governmental that the aggragate pattern is worsening knowledgeability!! It is difficult to explain why more than half our panel believed that milkmen and gas station attendants are public employees. But here is a distinction, between private and public sectors, with which they are daily in contact, and yet they have been for the most part unable to correctly identify the roles. So, salient occupations, reinforced frequently by the environment cannot be distinguished as governmental or nongovernmental. The distinction is too abstract, apparently, for most of this age group. The cognitive-developmental model seems to offer the best interpretation/explanation for this.

In kindergarten many of our children thought that God or Jesus was "the boss of the country," or that "Washington and Lincoln" were, in contrast to those who thought that the president was. When these responses are used as an independent variable and crosstabulated with the twenty-item cognitive map, the president responders were systematically more knowledgeable than the rest, while the least knowledgeable were the Washington and Lincoln responders. If the ability to understand one's environment is contingent at least in part on one's level of maturation, then these data make more sense than if they are only a response to salient environmental stimuli. The presidential responders are obviously more correct, and it makes sense that they are more knowledgeable than the others. Those who believe that Washington and Lincoln are the bosses have to believe that they are still alive (some thought that they picked the presidents, for example), that a person would have wooden teeth today, and a ruffled shirt (Washington), and a top hat (Lincoln), and that they were still powerful. It is not surprising that they were the least knowledgeable. Those ascribing power to theocratic leaders, invisible but benevolent, were transferring theocratic rule to the secular society, an incorrect but interesting cognitive leap.* It appears to this observer that we have three levels of cognitive maturation in evidence, not three levels of environmental stimuli. But, again, the data can be interpreted to fit social learning; indeed, three kindergartners were convinced that President Kimball, then president of the Mormon Church, was the boss of the country. Perhaps two persons whose pictures appear on our money should be boss, and two theocratic rulers, God and Jesus, should certainly be the boss of our secular world as well.

*Our data provide us with another hypothesis for why children view the president so benevolently. We believe that many children (40 percent of our kindergartners) first learn about God and Jesus, then later transfer their positive valence to the president, an still later transfer that positive attitude to the presidency and then to the government as a whole. (See Chapters 3 and 8 of The Child's Political World.)

In Conclusion

There are many other reasons, specific "little" findings, that seem to offer support for the cognitive-developmental model. The inability of demographic variables to explain variability in children's knowledge, the statistically significant correlation of the Political Understanding Index with the Symbol Recognition Index during those years when most of the panel is still at Stage 1, the predictive strength of the Legal Understanding Index (Appendix D), as well as its correlation with the Political Understanding Index, etc. The limits of this paper force closure, but for those interested Chapter 5 and 8 in The Child's Political World, as well as Chapter 6 on the growth in legal understanding will provide additional suggestive reasons.

A significant question facing political socialization researchers is the extent to which the cognitive-developmental and the social learning perspectives are helpful in explaining growth in civic awareness. Contemporary learning theorists usually acknowledge the influence of both external stimuli and internal maturation in varying degrees. Among the six categories of political objects in our cognitive map, regime-related items are those for which the cognitive-developmental hypothesis seems most appropriate, in large part because of their complexity and abstractness. In contrast, identification of political authorities, public issues, and political parties are much simpler and less abstract. These characteristics make it more likely that their understanding will stem more likely from environmental stimuli--although even these may involve a cognitive-developmental component.

It would appear that a comprehensive theory of political learning must encompass both models. While some things appear to be more closely related to one than the other, sometimes there appears to be a connection between the two. Earlier mention was made of the increase in predictive power of three of the four original threshold variables between third and forth grades because of the greater number of children having attained Level II. Advocates of these two models would take fundamentally different approaches to explaining why this occurred. The social learning theorist would look to the character of the stimulus and perhaps especially to the selective exposure that children received to the Propositon 13 controversy in 1978, an election issue focusing on taxes and the high cost of government. It did not focus at all on the President in any direct way, so that variable did not increase in predictive strength. But, this theory would declare that the variables relating to government, taxes, and the electoral process would become, to varying degrees, more salient as a result of the reinforcement through stimuli in the classroom, the home, and the mass media--and as a result these three cognitive variables would be better predictors of political knowledge than the presidential duties query.

The cognitive-developmental model, on the other hand, would argue that only those children who had matured sufficiently in their cognitive capacities would be able to increase their political knowledge significantly during a given year. The greater variability between the percentages of children at Levels I and II in the case of three of the four variables would be stressed. This theory would stress that those children moving to a higher cognitive level would be better equipped to apprehend and assimilate environmental stimuli, such as that provided by the Proposition 13 campaign, and thus they increased their general political knowledge more effectively than those who remained at a lower cognitive level. A composite theory is, I believe, preferable to choosing between the social and developmental alternatives. Social learning, in this case exposure to the Prop. 13 stimulus, did indeed increase the political understanding of many children, but it was especially significant in increasing the general political knowledge

of those who had achieved a higher level of cognitive capacity than the rest. In sum, those children at a more advanced level of cognitive development assimilate more political information from their environment than do those at a lower level. A composite theory of learning would be more complete and better explain the diversity of levels of knowledgeability, as well as the variability of children, by acknowledging both the role of developing cognitive capacities and the role of exposure to salient environmental stimuli.

From our analysis of which categories of political information appear to be most closely associated with cognitive development and which appear to be more the product of social learning, it would appear that children whose cognitive abilities have matured earliest are, by virtue of that development, better equipped to attend to and learn from environmental stimuli. Once children understand the meaning of election they are in a better position to begin retaining the names of candidates who are contesting a particular position. Once the functions of Congress are understood, then particular legislative proposals may take on greater meaning for many youngsters. In general, those political phenomena that involve a high level of abstraction, whether the distinction between the public/private sectors or geo-political units, are most easily grasped when a cognitive-developmental hurdle is surmounted at the same time that the child's immediate environment also contains relevant stimuli. When political phenomena involve abstract concepts, the learning process may require a significant step in cognitive development prior to the child's beginning to respond actively to social stimuli.

Students of political socialization do not yet have a unified theory of learning that will satisfactorily explain all or most of the products of this process. What we appear to have is a better understanding of the ways in which cognitive maturation and environmental stimuli may work together in a complementary fashion to produce significant advances in political understanding. Our conclusion, which agrees with Renshon and others, is that both models are useful, indeed complementary, for explaining growth in political understanding.

Appendix A

Ranking of Accurate Responses to Cognitive Map Items by Grade Level (in percentages)

Kindergarten		*First Grade*		*Second Grade*		*Third Grade*		*Fourth Grade*	
Item	*Percent Correct*	*Item*	*Percent Correct*	*Item*	*Percent Correct*	*Item*	*Percent Correct*	*Item*	*Percent Correct*
What does a policeman do?	91	Policeman	90	Policeman	94	Washington	94	Policeman	99
Does a judge work for govt?	76	Judge	84	Judge	89	Law	93	Law	99
Do we have a king in U.S.?	63	Law	71	Washington	82	Policeman	92	Washington	98
Does a milkman work for govt?	58	Washington	68	Stat. of Lib.	80	Stat. of Lib.	91	Judge	97
Recognize Washington's pict?	52	King	66	King	77	Judge	90	City	97
What is a law?	46	Soldier	49	Law	77	King	90	King	94
What city do you live in?	42	Milkman	48	City	66	Carter	88	Carter	94
What is the energy crisis?	36	City	47	Ford	64	City	87	Election	94
What does a soldier do?	34	Ford	44	State	57	State	84	Stat. of Lib.	93
Recognize inc. Pres.'s pict?	29	Stat. of Lib.	39	Milkman	49	Election	75	State	91
What country do you live in?	21	State	38	Soldier	47	Soldier	56	Soldier	75
What state do you live in?	17	Energy	30	Country	39	Energy	55	Country	70
Pict of Statue of Liberty	16	Country	27	Election	36	Country	54	Energy	68
Tell me about Watergate.	14	Election	14	Energy	26	Milkman	36	Taxes	59
What is an election?	7	Taxes	7	Taxes	21	Taxes	33	Brown	53
Picture of the Nat'l Capitol.	5	Capitol	6	Capitol	12	Brown	17	Milkman	31
What are taxes?	a	Watergate	4	Brown	9	Capitol	14	Bradley	27
Tell who Ron. Reagan is.	2	Bradley	3	Watergate	7	Bradley	12	Capitol	25
Tell who Tom Bradley is.	1	Brown	3	Bradley	4	Watergate	6	Politician	10
What do politicians do?	0.0	Politicians	1	Politicians	4	Politicians	5	Watergate	7

B

Criteria for Staging Threshold Variables

Criteria for Staging Responses to "What Does the Government Do?", "How Does the Government Do That?" and "Why Does the Government Do That?"

Stage One: Symbol Recognition

Responses associate the term with property, helping people, or other very general public functions. Stage 1 responses also encompass those in which there is a confusion between government and governor.

Stage Two: Task Pooling

Responses identify the institution in a partially accurate way, but do not specify any critical feature or any distinctive function as enumerated in the Stage 3 criteria listed below. Stage 2 responses may specify helping the country or helping the President, lawmaking without any further elaboration, or extremely generalized references to actual government functions, for example, to protect people. Unless there is a clear implication of a division of governmental tasks or unless "he" refers to the governor, the use of the third person singular ("he") constitutes a Stage 2 response.

Stage Three: Critical Features

Responses specify one of the following critical features or functions:

a) involved in law and rule making (must offer some details that imply division of labor in this process)
b) specific reference to governing or administering a political jurisdiction (with some illustration)
c) seeks to insure safety of either individuals or the national community (must offer some details about means or the threats, that is, go beyond phrase "protect us")

d) involved in acquisition, regulation, and allocation of economic resources, for example, taxation, protecting natural resources, and regulating or subsidizing economic activities

Stage Four: Multiple Features

Response specifies two or three of the critical features or functions enumerated in Stage 3 above.

Stage Five: Textbook Description

Response specifies with reasonable completeness all of the critical features enumerated in Stage 3 above.

Stage Six: Self-Conscious Ideological Interpretation

Response must meet the criteria for Stage 5 above but must also acknowledge the possibility of varying interpretations based on differing value or ideological assumptions.

Criteria for Staging Responses to "What Are Taxes?" and "Why Do People Pay Taxes?"

Stage One: Symbol Recognition

Responses associate the term inaccurately with a bill or payment not involving taxation, for example, a utility bill, or refer simply to "money," or identify a nongovernmental purpose to which tax revenue might be applied.

Stage Two: Task Pooling

Responses identify or imply a single specific tax, for example, property, sales (including reference to "extra money"), or income tax, or suggest a single or very generalized governmental purpose to which tax revenue might be applied.

Stage Three: Critical Features

Responses specify one of the following critical features or functions:

a) general payment to government
b) multiple sources of revenue, that is, reference to more than one of the following taxes: income, sales, property, and luxury
c) multiple government purposes to which tax revenue might be applied

d) reference to a single revenue source and a single governmental purpose to which that tax revenue might be applied

Stage Four: Multiple Features

Response specifies two or three of the critical features or functions enumerated in Stage 3 above.

Stage Five: Textbook Description

Response specifies with reasonable completeness all of the critical features enumerated in Stage 3 above.

Stage Six: Self-Conscious Ideological Interpretation

Response must meet the criteria for Stage 5 above but must also acknowledge the possibility of varying interpretations based on differing value or ideological assumptions.

Criteria for Staging Responses to "What Is an Election?" and "Who Picks the President?"

Stage One: Symbol Recognition

Responses associate the process with government but are extremely vague or inaccurate; references to meeting(s) and discussion(s) are included in this stage.

Stage Two: Task Pooling

Responses identify the notion of a broad electorate without implying any restrictions on participation, a general reference to voting with a specific implication of choice, or reference to voting for one specific office with the implication that it represents the full extent of electoral opportunity, for example, voting for the President.

Stage Three: Critical Features

Responses specify one of the following critical features or functions:

a) notion of a broad electorate, limited by a few demographic restrictions; age, residence, citizenship
b) choice between competing candidates or alternative positions on public issues

c) reference to such phenomena as nominating process or campaigns
d) reference to multiple offices or differing jurisdictions

Stage Four: Multiple Features

Response specifies two or three of the critical features or functions enumerated in Stage 3 above.

Stage Five: Textbook Description

Response specifies with reasonable completeness all of the critical features enumerated in Stage 3 above.

Stage Six: Self-Conscious Ideological Interpretation

Response must meet the criteria for Stage 5 above but must also acknowledge the possibility of varying interpretations based on differing value or ideological assumptions.

Criteria for Staging Responses to "What Is the Congress?"

Stage One: Symbol Recognition

Responses associate the term with government, politics, or an important public entity, but are extremely vague or inaccurate in describing the relationship, or identify it as a group of people without specifying a governmental association, or associate it with Washington, D.C., only.

Stage Two: Task Pooling

Response identifies the institution or process in a partially accurate way but does not specify or imply a critical feature of Congress enumerated in the Stage 3 criteria listed below. Stage 2 responses may include reference to two or more of the Stage 1 criteria, identification as a presidential helper or aide; mention of Senate, House of Representatives, or Congress; reference to elections or being voted for; or participating in voting but no reference to lawmaking.

Stage Three: Critical Features

Responses specify one of the following critical features or functions:

a) represent states, people, or group interests

Appendix C

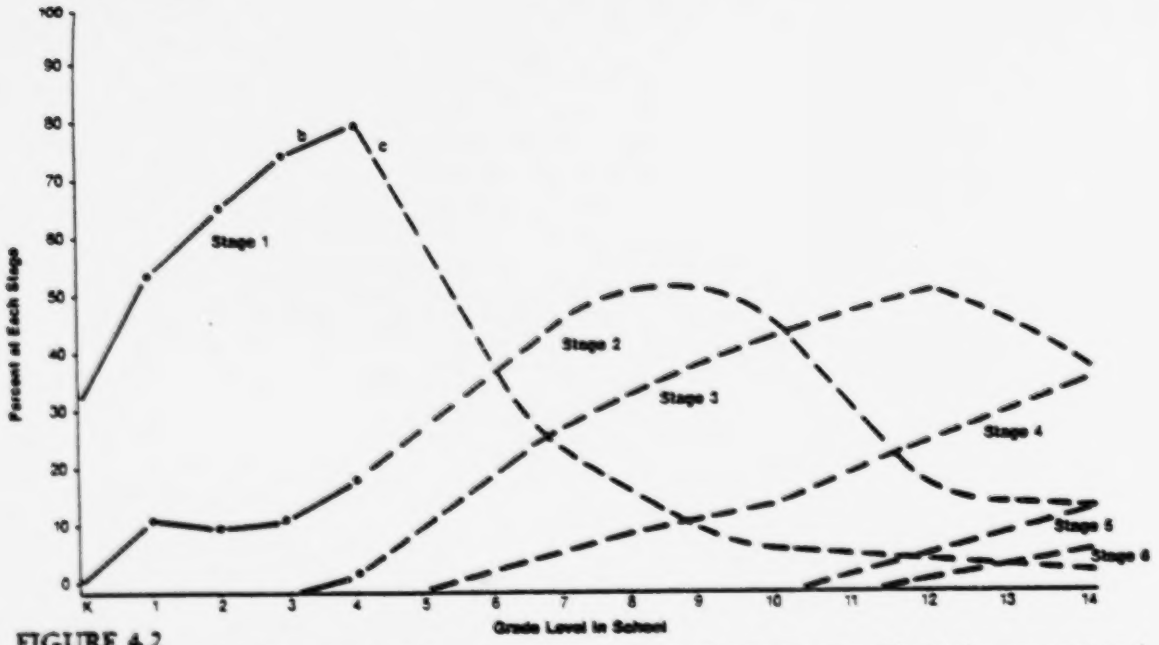

FIGURE 4.2
Actual and Projected Patterns of Cognitive Development by Stage over Time[a] (in percentages)

[a]Based on the expanded Political Understanding Index. See Table 4.9.
[b]Solid line represents present empirical data.
[c]Broken line is hypothesized pattern of political cognitive development extrapolated through first two years of college.

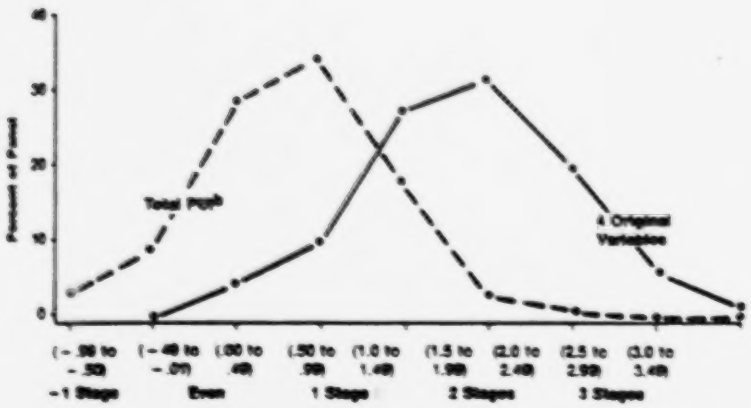

FIGURE 4.3
Contrasting Individual Pupil Gains Over Five Years on the Four Original Variables with the Expanded Political Understanding Index

[a]This is a comparison of the individual student's stage score at the end of fourth grade with that pupil's score using his or her first interview in kindergarten (149 children) or first grade (94 children).
[b]Second grade, 6 variables; third grade, 7 variables; fourth grade, 9 variables.

TABLE 4.9
Children at Each Stage on Four Regime Threshold Cognitive Variables, K-4 (by percentages)

	Stages	*K*	*1*	*2*	*3*	*4*
What does the President do when he goes to work?	1	29	35	28	18	25
	2	3	16	21	38	45
	3	1	0.5	1	3	10
	4	0	0	0	0	1
	Not Staged	68	49	50	41	19
What does the government do?	1	16	17	17	14	5
	2	10	20	28	50	51
	3	1	2	2	8	23
	4	0	0	0	0	2
	Not Staged	73	61	53	28	19
Electoral Process:						
What is an election?	1	19	27	17	4	1
Who picks the President?	2	5	17	46	61	50
	3	2	4	9	23	42
	4	0	0	0.5	2	6
	Not Staged	73	52	28	10	1
What are taxes?	1	14	33	42	40	21
	2	1	11	19	34	38
	3	0	2	7	7	33
	4	0	0	1	0.5	4
	Not Staged	85	54	31	19	4
Average for the four questions*	1	20	28	26	19	13
	2	5	16	28	46	46
	3	1	2	5	10	27
	4	—	—	0.4	0.6	3
	Not Staged	75	54	41	25	11

*This aggregate average for these four questions will not correspond to the summing of the average stage for each individual respondent. This is the case because the variation among individuals in the panel will not be identical to the variations in the entire group over these four variables.

TABLE 4.10
Aggregate Growth Measured by the Political Understanding Index (expressed in percentages)

Using Four Threshold Variables Across All Five Years

	Grade K	1	2	3	4
Stage on PUI					
Unstaged*	67	36	20	3	0
Stage 1	32	52	49	44	14
Stage 2	1	11	29	49	63
Stage 3	0	0.4	1	5	23
Average Stage	.30	.65	.98	1.42	1.96

Using Additional Variables in Grades 2, 3, and 4

Unstaged	67	36	28	18	6
Stage 1	32	52	64	72	76
Stage 2	1	11	9	10	17
Stage 3	0	0.4	0	0	2
Average Stage	.30	.65	.73	1.01	1.06
No. of Variables	4	4	6	7	9

*Unstaged extends from .00 to .49; Stage 1 from .50 to 1.49; Stage 2 from 1.50 to 2.49; Stage 3 from 2.50 to 3.49.

TABLE 6.5
Orientations Toward Law

Level	*Stage*	*Scope of Impact*	*Type of Impact*	*Character of the Formulation Process*	*Implied Primary Goal of the Legal System*
		What is a law?	What is a law? Why do we have laws? Why do you like or not like laws?	Who makes the laws? Why are laws fair or unfair?	Why do we have laws? What would happen if there were no laws?
I Preconventional	[1]Egocentric	Egocentric (affects respondent exclusively)	Physical protection or restriction	Single (Unitary) lawmaking agency	Physical control
(Egocentric perception of the law)	[2]Reciprocal	Reciprocal (laws help others as well as me)	General assistance beyond the physical	Plural agent for lawmaking	Promotes helpful patterns of behavior
II Conventional	[3]System View	Community (or national) system-wide impact	Promotion of an orderly community	Major role for a representative body	Prevents disorder or breakdown of society
(Individual passively subordinate to the law)	[4]Social Norm	Whole society	Teaches or guides the citizenry in behavior patterns suggested by the social norms	Accurate description of the role and relationship of two or more lawmaking agents	Promotes fairness and justice in society by educating as well as punishing
III Post-conventional	[5]Social Contract	Whole society	An active process by which citizens help make laws as well as learn from them	Accurate description of major elements in lawmaking, giving their relative importance	Promotes a social contract involving active participation of broad community to build just society
(Individual as active shaper and reformer of the law)	[6]Universal Legal Principles	Universal	Some citizens and groups seek to gain acceptance of universal principles by the community	Emphasizes the ideological assumptions underlying the influence of all major lawmaking agencies	To incorporate the principles of a higher law into the social contract and the consciousness of citizens

TABLE F.6
Statistically Significant Relationships Between the Political Understanding Index and the Cognitive Map Items[a]

	Grade Levels					
	K	*1*	*2*	*3*	*4*	*No. Years Significant*
National Community						
George Washington						0
Statue of Liberty		.001	.001		.001	3
National Capitol				.05		1
Governmental Regime						
King of the U.S.?		.05	.001			2
What is a law?	.01	.001	.001		.05	4
What is election?		.001	.001	.001	.05	4
Politician?			.001	.001	.001	3
Taxes?	.01	.001	.001	.001	.01	5
Policemen do?		.001				1
Soldier do?	.05	.001	.01	.05	.01	5
Authorities						
Incumbent President		.05	.001	.001		3
Incumbent Governor			.01	.001	.001	3
Mayor of L. A.		.001		.001	.01	3
Political Geography						
Name of country		.01	.01		.01	3
Name of state	.001	.001	.01			3
Name of city	.05	.01	.001			3
Public Issues						
Energy crisis		.05	.05		.05	3
Watergate	.01		.01	.05	.01	4
Public/Private						
Judge			.01			1
Milkman		.05				1
Totals by Grade	7	14	15	8	11	55/100

[a]The number of statistically significant correlations between the PUI and the cognitive map is severely reduced in third and fourth grades because of the number of map items having more than 84 percent correct responses. In second grade one of the two items over 84 percent is not significant, and in third and fourth grades 18 of 21 items *above* 84 percent are not significant when cross-tabulated with the PUI. In contrast, during these three years, 31 out of the 39 comparisons where knowledgeability is *below* 84 percent are statistically significant.

Footnotes

[1]A major stimulus for a systematic study of political socialization was provided by Herbert Hyman. His volume, published in 1959, catalogued extant knowledge about political behavior and emphasized the need to view political learning in terms of process: Political Socialization (New York: The Free Press, 1959). At the time that Hyman's volume appeared, data for a major empirical exploration of children's political awareness had been collected in New Haven by Fred Greenstein. His findings were reported in Children and Politics (New Haven: Yale University Press, 1965). Easton and Dennis and Hess and Torney conducted their eight-city study in 1962, with the data reported in two volumes: Robert Hess and Judith Torney, The Development of Political Attitudes in Children (Garden City, New York: Doubleday, 1967) and David Easton and Jack Dennis, Children in the Political System (New York: McGraw-Hill, 1969).

[2]Stanley W. Moore, James Lare, and Kenneth A. Wagner, The Child's Political World: A Longitudinal Perspective (New York: Praeger, 1985).

[3]Timothy E. Cook "The Bear Market in Political Socialization and the Costs of Misunderstood Psychological Theories," in The American Political Science Review, Vol. 79 (December, 1985): 1079-1093.

[4]The students in this panel have been told that they will be reinviewed every four years until the year 2002 if possible.

[5]R. Murray Thomas, Comparing Theories of Child Development (Belmont, CA.: Wadsworth, 1979):300-302.

[6]W. Connell, The Child's Construction of Politics (Melbourne, Australia: Melbourne University Press, 1971): Chapter 1.

[7]Frances Fitzgerald, America Revised (Boston: Little, Brown, 1979).

[8]Kohlberg's typology is outlined in his "Moral Stages and Moralization," in T. Lickona, ed., Moral Development and Behavior (New York: Holt, Rinehart, and Winston, 1976).

[9]Ibid.

[9]Moore, et. al.: 34.

[10]Ibid.: 35-36.

TABLE 5.2
Statistically Significant Correlations Between Demographic Variables and Twenty Cognitive Map Items

	Sex					*Ethnic Background*				
	K	1	2	3	4	K	1	2	3	4
Country										
Washington										
Statue of Liberty		•	•	•						
Nat'l Capitol				•						
King			•							
Law		•				•	•	•		
Election		•								
Politicians				•						
Taxes				•						
Policeman						•				
Soldier	•	•	•	•	•					
Pres's Picture										
Governor										•
Bradley										
State										
City			•							
Energy Crisis										
Watergate										
Judge										
Milkman										
Totals	1	4	4	5	1	2	1	1	1	0
		Sex = 15				Ethnic Background = 5				

*EAR stands for Estimated Academic Rank.

national community (name of country and recognition of pictures of George Washington, the Statue of Liberty, and the national Capitol), boys were more knowledgeable in each of the five years. In sum, among the children in our panel, boys are consistently more knowledgeable on a wide range of governmental matters.

Sibling Pattern					*Newswatching*			*Est Acad Rk*		*Total*
K	1	2	3	4	2	3	4	3	4	
								•	•	2
•								•		2
								•	•	5
		•							•	1
										1
									•	5
								•		2
									•	2
						•	•	•	•	5
•				•						1
•										6
	•									1
							•	•	•	4
			•				•	•		1
	•				•		•	•	•	5
					•			•		3
										0
										0
								•		1
										0
3	2	1	1	1	2	1	4	10	5	——

Sibling Pattern = 8 Newswatching = 7 EAR* = 10 55/400

In a period such as the present, when women are becoming more visible in elective and appointive offices, it is important to ask why elementary school girls systematically lag behind boys in political awareness. It would appear that it takes a very concerted effort on the part of key socializing agents—parents, schools, and

TABLE 5.5
Statistically Significant Correlations Between Threshold Cognitive Variables and Twenty Cognitive Map Items[a]

	President Do?					*Government Do?*					*What are taxes?*				
	K	*1*	*2*	*3*	*4*	*K*	*1*	*2*	*3*	*4*	*K*	*1*	*2*	*3*	*4*
Country									•			•	•		•
Washington										•					•
Statue of Liberty		•								•		•	•		•
Nat'l Capitol															•
King						•							•		
Law		•	•				•	•			•	•	•	•	•
Election			•	•				•		•	•	•	•	•	•
Politician			•		•			•		•					
Taxes			•				•								
Policeman		•													
Soldier		•			•	•	•			•		•	•	•	•
President	•	•	•				•	•				•	•		
Governor					•		•		•	•			•		
Bradley				•			•	•				•			
State						•	•		•			•	•		
City			•									•	•		
Energy Crisis			•					•					•		
Watergate				•				•		•					
Judge			•	•											
Milkman		•					•		•						
Totals by year	1	6	8	4	3	3	8	7	4	7	2	9	11	3	7

[a]*In third and fourth grades many items were known by more than 90 percent of the panel—reducing variability and the number of statistically significant relationships (see Table 4.1 and the footnote to Table 5.4). The Judge and Policeman items are particularly affected by this lack of variability.*

Electoral Process					Congress			Supreme Court			Senate		Totals
K	1	2	3	4	2	3	4	2	3	4	3	4	
•	•	•	•	•			•					•	11
		•		•									4
	•	•	•			•							9
	•				•				•	•	•	•	7
	•	•											4
	•	•		•									12
					•		•						11
		•		•	•	•	•	•		•	•	•	13
	•	•			•							•	6
	•												2
•	•	•				•							13
	•	•	•	•			•						12
	•	•	•	•	•	•	•			•	•	•	13
	•					•	•		•	•	•	•	11
	•	•											7
	•	•	•	•									7
•									•				5
									•	•			5
				•									3
								•					4
1	13	12	5	8	5	5	6	2	4	5	4	6	161